**AstroBoost Activity notes**

**Additional comments received after delivery of the activities.**

**The best activities in practice were:**

* IR camera: looking at people / different transparency materials (let people have free range with it and they will find interesting things to investigate, you can use the lanyard around neck/wrist to make it clear whose turn it is to avoid snatching etc).
* IR camera: looking at hand-print left on book, then look on the other side of book to show how the heat has come through. This is surprisingly surprising to people!
* Spectroscopic glasses
* Print tray game (tip: let ‘finder’ kids play with camera while items are being hidden). This worked well with the ball-bearings on the heat pad. The print tray was wooden, and sprayed black. The lid was made with multiple layers of bin-bag material bound together with black gaffer tape at the edges. The ball-bearings were ¾-inch.
* The heat pad worked well to warm items without risk of burning. It was a Beurer HK35 Large Luxury Electronic Soft Micro Fleece Heat Blanket Pad (~£23).
* IR transmitter/detector (tip: cover the ‘on’ indicator LED so they don’t think that’s the transmitter). This let you plug in your phone, play music, transmit via near-IR to the speaker device, then interrupt signal with different materials, or experience interference from nearby electronics, fluorescent lighting etc. Good for explaining why Webb has to be so far from Earth. Try suggesting people try experimenting at home using a TV remote control, to see what it can go through or reflect from. Please contact me if you want details about these and I can put you in touch with the person who made them for tips on how to make your own.

**Less good activities:**

* Bicycle pump needs a valve at the end to produce pressure, but this didn’t work well. Would a metal/foot pump work better? Possibly also a problem ref having a person in shot means that the temperature change is too slight to show up? It worked when testing, which was during a heatwave … But the can of air works well – eg try spraying onto hand/book.
* Where is Webb – this activity worked well in communicating the science (it went down well with some GCSE students), but really the Earth/Moon/Webb are too small to see for a class-size group, and the lines got tangled up too easily. Could be improved?
* Herschel Experiment – as noted in the activity information, it is very hard to see any temperature change.

**Other useful info:**

* Making the gold mirror is good fun, but kids can do it very quickly and so it needs some sort of extension (even just a person with it to talk to them about how it works / folds / real size etc?)
* UV torch needs supervision ref risk of shining into eyes.
* Lego models can be made, taken apart, and re-made within a round-robin activity. Warning it’s quite tricky to procure all the required parts and you’ll probably need to go through a number of suppliers (AstroBoost ended up buying ALL the purple six-pieces in Europe).
* IR camera: it is recommended to spend a while playing with the software. If using this alongside Powerpoint, do not use Powerpoint Present mode, instead use duplicate screen view. This makes it easier to switch windows.
* Stickers might be viewed as unacceptable in some contexts as they are single-use plastics.

**Powerpoint presentation:**

* Warning; the picture at the start is of a camera with zoom lens, not a telescope!
* The KS3 wavelength bits really are too much for younger kids.
* Option to add video of telescope unfolding:
  + This one’s great: <https://www.youtube.com/watch?v=8GOOMG73wcY>
  + Shorter but older versions: <https://www.youtube.com/playlist?list=PL691BF261E32A4420>

AstroBoost reports and resources containing more detailed information can be downloaded from the RAS website or from <https://www.jwst.org.uk/articles/astroboost/> .

**For other questions:**

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* For further information about activity development, contact the Project Manager, Jenny Shipway: [jenny@jennyshipway.com](mailto:jenny@jennyshipway.com)
* For adapted versions and further hints and tips, you can directly contact the AstroBoost project partners who delivered the resources:
  + Guildford Astronomical Society: [secretary@hantsastro.org.uk](mailto:secretary@hantsastro.org.uk)
  + Hampshire Astronomical Group: [outreach@guildfordas.org](mailto:outreach@guildfordas.org)
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